ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

BRUNSWICK HARBOR DEEPENING PROJECT, GLYNN COUNTY, GEORGIA

PROPOSED MODIFICATION OF THE WETLAND MITIGATION PLAN

US ARMY CORPS OF ENGINEERS SAVANNAH DISTRICT

DECEMBER 2006

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FINDING OF NO SIGNIFICANT IMPACT

Name of Action: Brunswick Harbor Deepening Project – Proposed Modification of the Wetland Mitigation Plan

- 1. Project Description: The proposed work as originally advertised was to modify the Brunswick Harbor Deepening Wetland Mitigation Plan to allow construction of temporary barge access and to allow placement of excavated sediment in the Brunswick Harbor Ocean Dredged Material Deposal Site (ODMDS). Comments received on the draft Environmental Assessment (EA) and cost projections led to a decision to consider a further modification to the project to reduce potential wetland impacts and required wetland mitigation. The selected alternative is to enlarge the existing East River Turning Basin rather than build a new turning basin in East River.
- **2. Coordination:** Savannah District has coordinated this project with Federal and State resources agencies and the interested public and issued a Notice of Availability of the draft EA in order to:
- a. Inform agencies and individuals of the proposed work and the environmental evaluation contained in the draft EA
 - b. Provide an opportunity for comments on that evaluation and my findings.
- **3. Subsequent Coordination:** Because the selected alternative was considered a minor change to the project that reduced environmental impacts, especially wetland impacts, the selected plan to reduce project impacts through enlargement of the existing turning basin was coordinated only with the resource agencies. No objections to this approach were received.
- **4. Environmental Impacts:** The proposed action is in compliance with all environmental laws. Some unavoidable potential minor impacts include additional water quality impacts associated with additional dredging in the existing East River Turning Basin. These impacts are all expected to be minor and not expected to result in any violations of State water quality standards or Federal water quality criteria. Potential benefits include a marked reduction in wetland impacts and required wetland mitigation, when compared to the formerly proposed new turning basin and Jekyll Island mitigation plan. Overall, the environmental impacts of implementing the proposed action would be minor in scope.
- **5. Determination:** I have determined that this action does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, the action does not require the preparation of a detailed statement under Section 102 (2) (c) of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.). My determination was made considering the following factors discussed in the EA attached to this document:

- a. The proposed action has been designed to minimize adverse impact to threatened or endangered species potentially occurring in the project area.
- b. No unacceptable adverse cumulative or secondary impacts would result from project implementation.
- c. The proposed activity would not be constructed until a cultural resource survey has been completed and coordinated with the Georgia State Historic Preservation Officer (GASHPO). The work would be designed to not impact any potential cultural resources in the project area.
 - d. No additional long term impacts would be associated with the proposed project.
 - e. No significant impacts on air quality are expected from the proposed project.
- f. The proposed action complies with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", and does not represent disproportionate high and adverse human health or environmental effects on minority populations and low-income populations in the United States.
- g. The proposed activity would result in a marked decrease in wetland impacts when compared to the plan described in the Brunswick Deepening Feasibility Study and Final EIS, from 18.1 acres to 7.3 acres.
- **6. Findings:** The proposed modification of the Brunswick Harbor Deepening Project to reduce project wetland impacts through enlargement of the existing East River Turning Basin would result in no significant environmental impacts and is the alternative that represents sound engineering practices and meets environmental standards.

Date:	
	Mark S. Held
	Colonel, US Army
	District Engineer

EXECUTIVE SUMMARY

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA)(42 U.S.C. 4321 et seq.) and U.S. Army Corps of Engineer regulations at 33 CFR Parts 230 and 325 for implementing NEPA (Federal Register Vol. 53, No. 22, February 3, 1988, p. 3119-3137. This EA identifies potential environmental effects, ensures that the proposed work complies with all environmental regulations, and concludes that the proposed work is not a major Federal action significantly affecting the quality of the human environment and, therefore, does not require preparation of an Environmental Impact Statement (EIS).

The proposed work as originally advertised was to modify the Brunswick Harbor Deepening Wetland Mitigation Plan to allow construction of temporary barge access and to allow placement of excavated sediment in the Brunswick Harbor Ocean Dredged Material Deposal Site (ODMDS). Comments received on the draft EA and cost projections led to a decision to consider a further modification to the project to reduce potential wetland impacts and required wetland mitigation. The selected alternative is to modify the Brunswick Harbor Deepening Project to include enlargement of the existing East River Turning Basin, rather than construction of a new turning basin, thereby reducing proposed wetland impacts from 18.1 acres to 7.3 acres, and reducing wetland mitigation requirements from 59.4 acres to 16.7 acres.

Brunswick Harbor Deepening Project Proposed Modification to the Wetland Mitigation Plan

1.0 BACKGROUND

Environmental approvals for the Brunswick Harbor Deepening Project were obtained through the Brunswick Harbor Deepening Final Environmental Impact Statement (FEIS). A wetland mitigation plan for projected unavoidable losses of 18.1 acres of *Spartina alternaflora* marsh from the proposed project was included in the FEIS. The unavoidable loss of wetlands was due almost entirely to construction of a new turning basin in the upriver portion of East River. The mitigation plan called for restoration of 43 acres of previously impacted salt marsh on Jekyll Island. The Record of Decision for this project was signed on May 12, 1999. In response to information on the proposed site that became available when detailed design work was initiated, the mitigation plan was revised to include restoration of 59.4 acres at the site. Environmental approvals for a modification to the mitigation plan to allow placement in Andrews Island or other approved high ground area of material excavated from the mitigation site were gained through an EA and FONSI entitled *Proposed Modifications to the Brunswick Harbor Deepening Project* and dated February 2002.

The US Army Corps of Engineers, Savannah District (District), sent out a public notice on April 30, 2004, providing notice of a draft EA proposing changes to the wetland mitigation plan. Those proposed changes involved construction techniques and placement alternatives. In response to that draft EA, the District received several suggested alternative wetland mitigation plans, all of which were problematic.

A recent cost estimate for the approved Jekyll Island mitigation plan was approximately \$8,000,000 (substantially higher than our original estimate of about \$750,000). It is also likely that this estimate may be low. Due to the high cost of the approved mitigation plan, and the lack of suitable and demonstrably less expensive mitigation alternatives, the District investigated dredging alternatives that could reduce the proposed amount of wetland impacts, and thus the cost of wetland mitigation.

The District has found that an alternate plan to enlarge the existing East River Turning Basin, instead of constructing a new turning basin, would meet project needs for an adequate turning basin while impacting only approximately 5.9 acres of wetlands. Including one acre for other project wetland impacts, and 0.4 acre of wetland impacts for ditches to the mitigation sites, the proposed wetland impact for the modified Deepening Project should be approximately 7.3 acres, or about 40 percent of the original wetland impact proposal. It is now proposed that the wetland mitigation plan be modified to consist of excavating to marsh elevation old dredge material mounds along the outside of the Andrews Island dikes. The proposed modification also includes proposed transition areas on the north and south sides of the proposed turning basin enlargement. These areas would make entering and leaving the turning basin much easier. However, they may or may not be constructed, depending on funding.

By emails dated 27 April and 20 September 2006, the District coordinated the Turning Basin Enlargement proposal and revised wetland mitigation plan with the resource agencies. The District received several comments on the original email and made changes to the wetland mitigation plan to address those comments.

In those emails the District requested the agencies's approvals of this modification to the Brunswick Harbor Deepening Project as a minor modification requiring no additional National Environmental Policy Act (NEPA) review. The emails included the opinion that the proposed modifications could be considered minor since they reduce overall environmental impacts. Because of the minor nature of the impacts, it was the District's stated intention that the draft of this EA "Proposed Modification of the Wetland Mitigation Plan" for the project be finalized by including the proposed modification as the selected alternative. Included in the alternative is an on site wetland mitigation plan to address the reduced wetland impacts. This plan involves excavation to marsh level of old dredged material mounds along the east end of Andrews Island outside the existing confined disposal facility (CDF) dikes and adjacent to the dredging (impact) area.

2.0 NEED FOR ACTION AND PURPOSE

NEED FOR ACTION

Problems in implementing the proposed mitigation plan were identified during the project design phase. These problems center around identifying a practicable means of removing and disposing of sediment excavated from the mitigation site. After the FEIS was completed, the Jekyll Island Authority expressed concern about transportation of excavated sediments on Jekyll Island roadways. Several modifications (alternatives) to the mitigation plan were proposed to address these issues. After investigating these other alternatives, the District concluded that the appropriate action was to modify the Jekyll Mitigation Plan to address environmental and constructability concerns that had become apparent and prepared a draft EA. The original public notice on the availability of a draft EA to consider the modifications to the Jekyll Mitigation Plan resulted in submission during the comment period of two additional entirely different mitigation plans. Subsequent evaluation of the three plans showed that none of the plans were satisfactory. This lead to the District reevaluating the dredging plan to see if alternatives were available that would result in less wetland impacts, and thus require less wetland mitigation. The outcome of this reevaluation was the proposal to enlarge the existing East River Turning Basin, rather than construct a new turning basin.

PURPOSE

An EA is prepared in conformance with procedures established by the National Environmental Policy Act of 1969 (NEPA) to identify impacts expected to result from implementation of a proposed action. The assessment ensures that the decision-maker is aware of the environmental impacts of the action prior to the decision to proceed with its implementation. An EA concludes with one of two determinations: (1) that the proposed action will not result in significant adverse environmental impacts, in which case a Finding of No Significant Impact (FONSI) would be

prepared for signature by the District Engineer, or (2) that significant adverse impacts would indeed result from the proposed action and that an Environmental Impact Statement (EIS) should be prepared to more fully document those impacts before a decision is made to proceed with the action.

This EA is being done to verify that the proposed modification to enlarge the existing East River Turning Basin is environmentally acceptable and in accordance with applicable laws and regulations. Alternatives are evaluated, and the least environmentally damaging practicable alternative is identified.

SUMMARY OF PROPOSED ACTION

The originally approved wetland mitigation plan calls for restoration of 59.4 acres of salt marsh on Jekyll Island previously impacted by discharge of dredged material. Restoration entails removal of dredged material from the site. The original mitigation plan, as described in the FEIS, called for placement of material excavated from the site on an adjacent high ground area. This plan was modified by EA in February 2002, to allow placement of excavated materials on Andrews Island or other approved high ground area. After finalization of that EA, it became apparent that water access to the site would be necessary to allow excavated sediment to be carried by water to Andrews Island. Two alternative means of access were proposed: 1) build a temporary barge access canal into the site from Jekyll Creek or 2) build a temporary dock facility with minor excavation at the dock face to allow a barge or similar craft to tie up and receive sediments to be transported to a disposal facility. In addition, as an alternative to disposal in the Andrews Island dredged material disposal facility, it was proposed that materials be transported and discharged in the Brunswick Harbor Ocean Dredged Material Disposal Area (ODMDS).

In response to the draft EA advertising modifications to the Jekyll Island Mitigation Plan, the District received suggestions on two additional alternatives, 1) restoration of portions of "The Marshes of Glynn" adjacent to US Highway 17, and 2) restoration of wetlands on Little St. Simons Island. After finding all proposed wetland mitigation plans problematic, the District looked for ways to reduce the wetland mitigation requirements. This led to the proposal to reduce wetland impacts by enlarging the East River Turning Basin, rather than constructing a new turning basin up river of the existing one.

3.0 AFFECTED ENVIRONMENT

This section describes the environmental components of the area that define or could be affected by implementation of the proposed alternatives. This section does not represent the effects on the environment. Instead, the descriptions in this section form the baseline for the comparisons of impacts contained in Section 4. The affected environment is adequately described in the FEIS (CESAS, 1998) and those descriptions will not be repeated here.

LOCATION

Brunswick Harbor is located in the southeastern section of Glynn County, Georgia, adjacent to the City of Brunswick. The harbor is approximately 80 highway miles south of Savannah, Georgia, and 70 miles north of Jacksonville, Florida (See Figure 1).



Figure 1 - General Location Map

DESCRIPTION

A description of the general area is presented in the May 1998 FEIS for the Brunswick Harbor Deepening. Those descriptions cover the proposed area and are not repeated here. Figure 2 shows the location of Andrews Island and the Brunswick Harbor ODMDS. A map of the revised wetland mitigation plan, with the proposed barge canal, is shown in Figure 3. The proposed docking facilities are shown in Figure 4. Proposed modifications to reduce wetland impacts through expansion of the existing East River Turning Basin are shown in Figures 5-11.

TOPOGRAPHY, HYDROGRAPHY, AND SEDIMENTS

The entrance channel oceanward of Station 0+000 (bar channel) and the Brunswick ODMDS are in open ocean waters where currents ensure that mixing and dilution is rapid. The maintained depth of the Brunswick Harbor navigation channel in St. Simons Sound is –30 feet mean lower low water (MLLW), and in the ocean bar channel is –32 feet MLLW. The Atlantic Intracoastal Waterway (AIWW) navigation channel adjacent to the mitigation site (Jekyll Creek) has not been

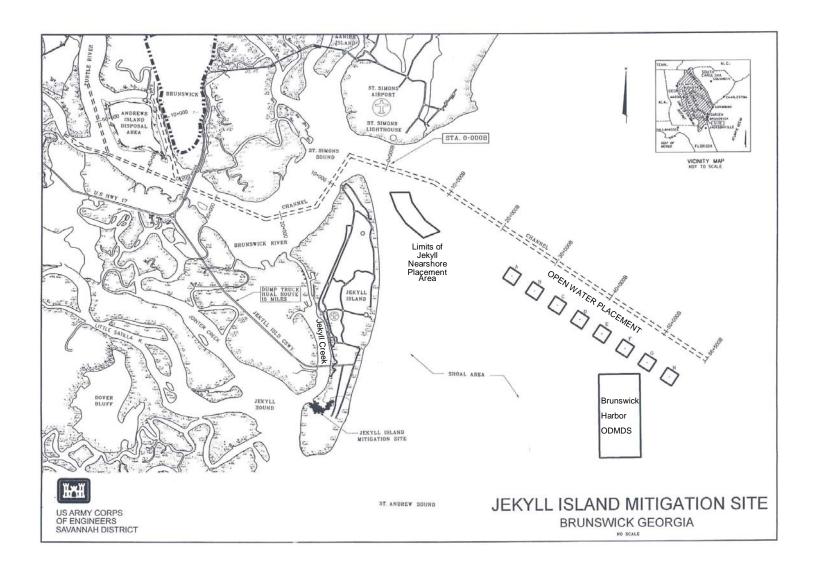


Figure 2 - Dredging Locations

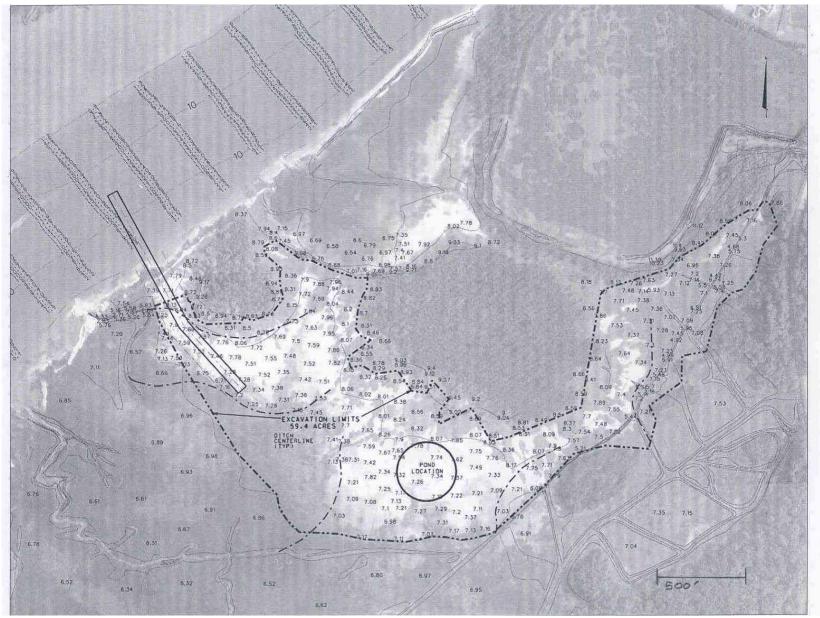


Figure 3 - Wetland Mitigation Plan and Proposed Barge Canal

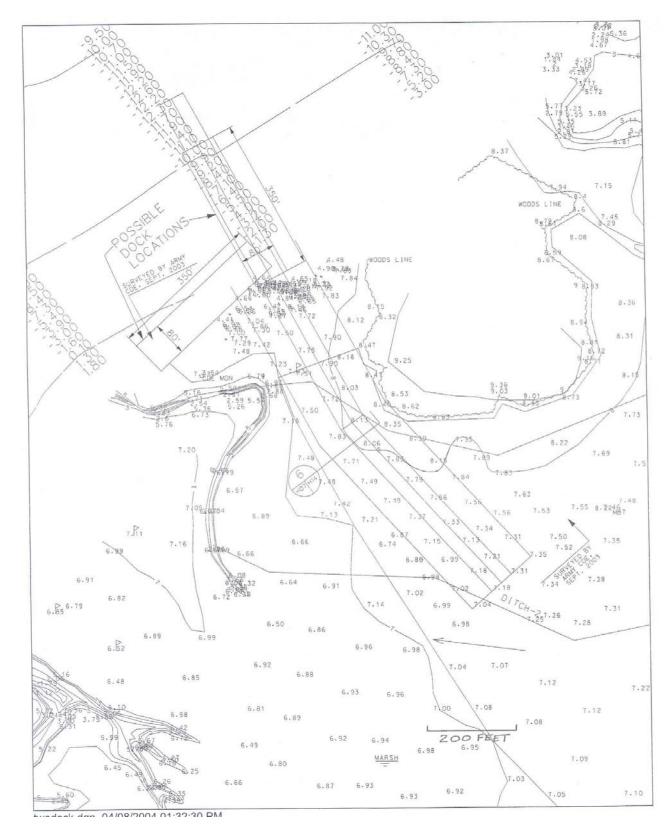


Figure 4 Proposed Temporary Docking Facilities

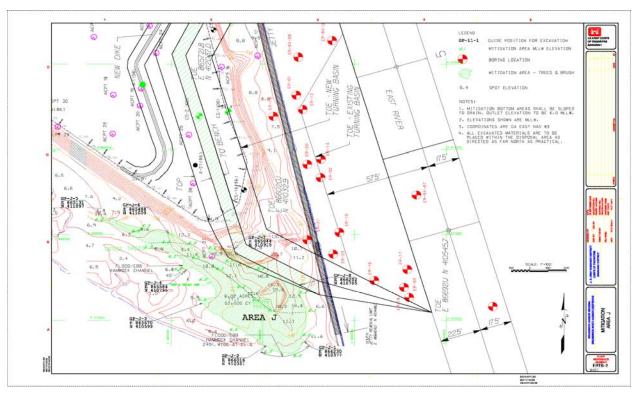


Figure 5. Mitigation Area J

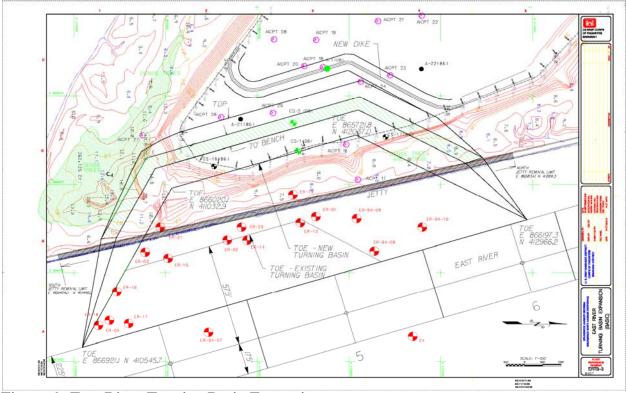


Figure 6. East River Turning Basin Expansion

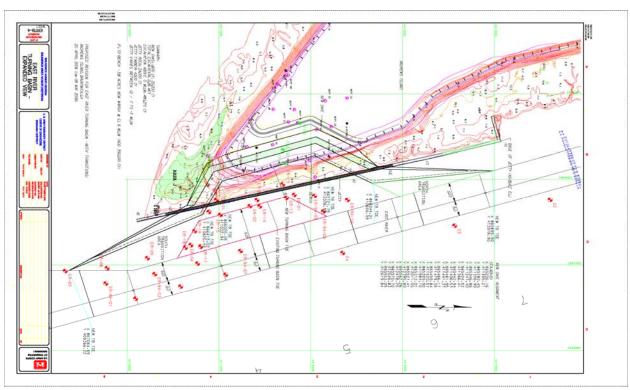


Figure 7. East River Turning Basin Expanded View

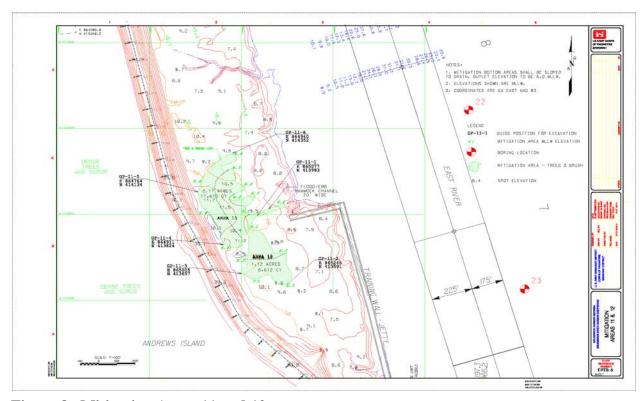


Figure 8. Mitigation Areas 11 and 12

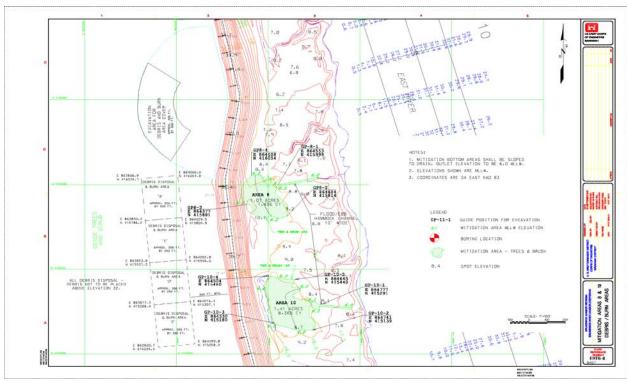


Figure 9. Mitigation Areas 8 and 10



Figure 10. Mitigation Areas 2, 4, 6 and 7

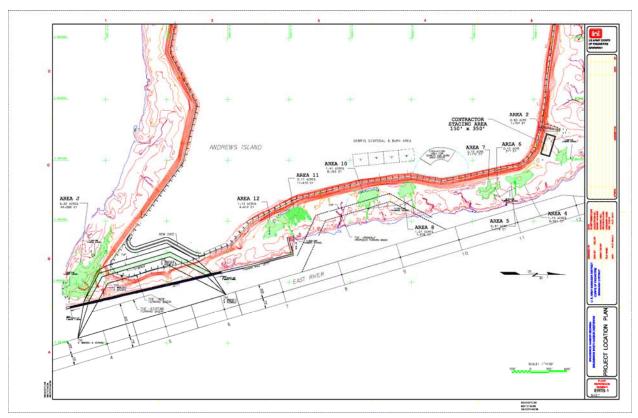


Figure 11. Project Location Plan

maintained in several years. The authorized project depth for Jekyll Creek is 12 feet MLLW. The latest condition survey was conducted in January 2004. It showed the minimum depth for the Jekyll Creek Channel to be 6.5 feet MLLW.

The Jekyll Island mitigation site sediments were sampled in October 2003 and tested for physical and chemical characteristics. No contaminant related concerns were identified. Results of the testing are discussed in the Section 103 Evaluation, Appendix D. Sediments to be excavated as part of the East River Turning Basin Expansion and Andrews Island mitigation would be placed in the Andrews Island CDF.

THREATENED, ENDANGERED AND OTHER LISTED SPECIES

Federally listed threatened and endangered sea turtles and the Florida manatee occur in the project area, especially when water temperatures are at or above 14 degrees C.

EXISTING WATER RESOURCE PROJECTS

Two Federal water resource projects exist within the greater project area. The proposed work is a modification to the Brunswick Harbor Deepening Project. That navigation project essentially provides deep-water access to docks located in the City of Brunswick and surrounding area. The AIWW is designed to provide a 12-foot deep protected channel at MLLW for commercial and recreational vessels moving along the coast.

PREVIOUS ENVIRONMENTAL REVIEW

The most recent environmental review of the Brunswick Harbor is the Brunswick Harbor Deepening FEIS. The Record of Decision for that EIS was signed on 12 May 1999. Subsequent EA's modifying the project include *Construction of Bird Nesting Island* for which a FONSI was signed in July 2001, *Proposed Modifications to the Brunswick Harbor Deepening Project* for which a FONSI was signed February 2002, and *Use of Plow/I-Beam Bed-Leveling Mechanical Dredging Device* for which a FONSI was signed November 2003.

4.0 FUTURE CONDITIONS WITHOUT PROJECT

This section evaluates the future condition of the area if the proposed work is not implemented. Construction of the Wetland Mitigation under the current environmental approvals would be expensive and problematic. Disposal of excavated materials by trucking of excavated materials off Jekyll Island to either Andrews Island or approved other high ground area would probably be required. This alternative has met some local resistance and would be very expensive. No practicable alternative currently exists. It is unlikely that materials could be removed from the site by water without additional environmental approvals.

5.0 DESCRIPTION OF ALTERNATIVES

IDENTIFICATION OF ALTERNATIVES

The alternatives can be grouped into four categories: A, "No Action", B, Modifications to the Jekyll Island Mitigation Plan, C, Alternatives to the Jekyll Island Mitigation Plan, and D, Project Modifications to Reduce Wetland Impacts.

ALTERNATIVE A - NO ACTION

Under this alternative, the Jekyll Island Mitigation Plan remains as described in the EIS, with the only approved method of removal of excavated materials from the site being by truck from Jekyll Island and transport of the material to Andrews Island or other approved high ground area. It is currently believed that use of this method under conditions of minimal environmental impact would be very expensive. For example, methods used to ensure that the trucks do not spill excavated material onto paved roads would be expensive. The large number of trucks that would be required to daily move in and out of the site would be a hazard to other local traffic, and would most likely require road paving at the end of the project to return the road to its original condition. The project would remain as described in the FEIS, with 18 acres of wetland impacts and 59.4 acres of wetland restoration on Jekyll Island.

ALTERNATIVE B – MODIFICATIONS TO THE JEKYLL ISLAND MITIGATION PLAN

Construct Temporary Barge Access Canal. A 14-foot deep barge/dredge access canal 60 feet wide, 1,350 feet long, and requiring 90,000 cubic yards (CY) of excavation would be constructed at the site. Approximately 900 feet of the canal would be constructed into high ground and marsh and the other 450 feet would be deepening in Jekyll Creek. It is expected that transport of excavated material would be to Andrews Island or the Brunswick ODMDS (if approved). After transport of excavated material off site is finished, the canal would be filled out to the edge of the bank to the elevation of adjacent sediment and stabilized. This would result in replacement of the berm along the bank of Jekyll Creek to original elevations.

Construct Temporary Docking Facility. A temporary docking facility to include pilings, fixed and floating dock, and dolphins would be constructed in Jekyll Creek adjacent to the site to allow mooring of barges and similar vessels for transport of excavated material from the site. Transport of material is expected to be to Andrews Island or the Brunswick ODMDS (if approved). Some minor excavation at the dock face would be required for adequate clearance of moored vessels. Two potential dock configurations are envisioned. (1) About a 20-foot wide dock approximately 350 feet long may be constructed parallel to the bank. This would require excavation to a depth of -12 feet MLLW of about 17,000 CY of sediment up to 90 feet in front of the dock face and 9,000 CY of sediment for a 60-foot wide passageway to the toe of the AIWW channel (a total of 26,000 CY of sediment). (2) About a 20-foot wide dock approximately 350 feet long may be constructed perpendicular to the bank. This could require excavation of about 12,000 CY of sediment to construct a 40-foot wide area of deep water (-12 feet MLLW) on either side of the dock leading to a 60-foot wide passageway to the toe of the AIWW Channel. No structure would be placed closer than 90 feet to the toe of the AIWW Channel. All structures would be removed in their entirety once construction of the project is completed. Excavated sediments may be stockpiled within the mitigation site prior to transport for disposal.

Transport Excavated Materials to the Brunswick Harbor ODMDS. Materials excavated from the mitigation site (330,000 CY), and the barge canal (90,000 CY) or temporary docking facility (12,000 to 26,000 CY) would be transported to the Brunswick Harbor ODMDS. The transport and disposal of excavated sediment in the Brunswick Harbor ODMDS requires U.S. Environmental Protection Agency (EPA) concurrence in the District's Section 103 Evaluation. This evaluation is included as Appendix D to this EA.

ALTERNATIVE C - ALTERNATIVES TO THE JEKYLL ISLAND MITIGATION PLAN

Two alternatives to the Jekyll Island Mitigation Plan were received during the comment period, as follows.

Restore Marshes Adjacent to Highway 17. The proponent described the proposal as "a marsh creation project centered on an area of unsightly mud flats known as the East Basin." It would involve partial restoration of marshes impacted by the construction of Highway 17 in Brunswick,

including partial restoration of Dart's Creek and "the Marshes of Glynn." See Appendix C, Comments for details on this proposal.

Restore Wetlands on Little St. Simons Island (LSSI). According to the proponents, the LSSI Mitigation Plan would "include perpetual preservation of a substantial amount of highly productive salt marsh, restoration and enhancement of a substantial amount of impacted salt marsh, preservation and enhancement of an ecologically important wetland complex, the perpetual protection of such wetlands and of an adjacent surrounding upland buffer containing valuable ecological and geological features." See Appendix C, Comments, for details on this proposal.

ALTERNATIVE D (SELECTED ALTERNATIVE) – PROJECT MODIFICATIONS TO REDUCE WETLAND IMPACTS

The originally approved wetland mitigation plan calls for restoration of 59.4 acres of salt marsh on Jekyll Island previously impacted by discharge of dredged material. Restoration would entail removal of dredged material from the site. The original mitigation plan, as described in the FEIS, called for placement of material excavated from the site on an adjacent high ground area. This plan was modified by EA in February 2002, to allow placement of excavated materials on Andrews Island or other approved high ground area. After finalization of that EA, it became apparent that water access to the site would be necessary to allow excavated sediment to be carried by water to Andrews Island. Two alternative means of access were proposed: 1) build a temporary barge access canal into the site from Jekyll Creek or 2) build a temporary dock facility with minor excavation at the dock face to allow a barge or similar craft to tie up and receive sediments to be transported to a disposal facility. In addition, as an alternative to disposal in the Andrews Island dredged material disposal facility, it was proposed that materials be transported and discharged in the Brunswick Harbor Ocean Dredged Material Disposal Area (ODMDS).

In response to the draft EA advertising modifications to the Jekyll Island mitigation plan, the District received suggestions on two additional alternatives, 1) restoration of portions of "The Marshes of Glynn" adjacent to US Highway 17, and 2) restoration of wetlands on Little St. Simons Island. Due to the high cost of the approved mitigation plan, and the lack of suitable and demonstrably less expensive mitigation alternatives, the District investigated dredging alternatives that could reduce the proposed amount of wetland impacts, and thus the cost of wetland mitigation. This led to the proposal to reduce wetland impacts by enlarging the East River Turning Basin, rather than constructing a new turning basin up river of the existing one.

The District has found that an alternate plan to enlarge the existing East River Turning Basin, instead of constructing a new turning basin, would meet project needs for an adequate turning basin while impacting only approximately 5.9 acres of wetlands. Including one acre for other project wetland impacts, and 0.4 acre of wetland impacts for ditches to the mitigation sites, the proposed wetland impact for the modified Deepening Project should be approximately 7.3 acres, or about 40 percent of the original wetland impact proposal. Wetland impacts would consist primarily of excavation of the marsh fringe around the existing turning basin and total 7.3 acres. Proposed mitigation consists of excavation of old dredged material mounds along the east end of

Andrews Island near the existing turning basin. Total acres of restoration would be 16.7. Calculation of mitigation acreage is shown in the attachment entitled "Wetland SOP Compliance."

It is now proposed that the wetland mitigation plan be modified to consist of excavating to marsh elevation old dredge material mounds along the outside of the Andrews Island dikes. The proposed modification also includes proposed transition areas on the north and south sides of the proposed turning basin enlargement. These areas would make entering and leaving the turning basin much easier. However, they may or may not be constructed, depending on funding. Details are shown in Figures 5-11.

6.0 WETLAND MITIGATION PLAN SUMMARY

Wetland mitigation would consist of excavating to adjacent *Spartina alterniflora* marsh elevation old high dredged material deposits along the eastern side of Andrews Island adjacent to the East River. These mounds and the required ditches to ensure adequate hydrology are shown in Figures 5 - 11. The following table summarizes proposed mitigation work. Mitigation areas are to be sloped to drain, with the ditch outlets at +6.0 MLLW.

Square Feet of Ditch Area High Ground Excavated in Excavation Area Ditch Width Ditch Length Wetlands 25,940 2 10 100 1.000 4 48,086 10 236 2,360 5 13,239 0 0 4,226 10 57 570 6 7 31,368 10 105 1,050 8 46,727 10 236 2,360 10 61,222 2,240 10 224 11 90,788 20 190 3,800 12 48,807 20 30 600 J 257,228 110 35 3,850 627,631 210 1213 17,830 Totals **Total Acres** 14.41 0.41

Table 1: Wetland Mitigation Plan Excavation

Monitoring (From paragraph 4.07 in Appendix B of the Brunswick Deepening FEIS). To ensure that the restoration project is functioning as intended and producing the wetland functional values needed to compensate for those that will be lost, a monitoring program will be implemented. Natural revegetation of the site is expected to occur over a period of time. Experience at similar projects indicates that a site should become fully revegetated after about four years. Therefore, the Corps would make an annual inspection of the site to estimate the rate

of revegetation. If the vegetative cover does not meet the criteria shown below in any year, the Corps will inform the United States Fish and Wildlife Service (USFWS) and the Coastal Resources Division of the Georgia Department of Natural Resources (GADNR-CRD) and discuss what action the Corps should take to correct the situation. If the vegetative cover does not meet the criteria at the end of the 4-year period, the Corps will re-coordinate with the USFWS and GADNR-CRD to determine what additional steps the Navigation Project needs to take to fulfill its mitigation commitment. At the end of the 5-year monitoring period, the Corps will produce a document summarizing the data and any lessons learned during the monitoring program.

Control. A restrictive covenant (RC) and government/public protection will be placed on the restored dredge mound sites (14.4 acres). Such a covenant will not be placed on the shelf acreage, since that could restrict subsequent enlargement of the turning basin, should that become necessary.

Shelf Acreage. Recognizing that the marsh fringe (2.3 acres) would be a wetland mitigation site, the District recognizes that should impacts to this mitigation acreage become necessary in the future, mitigation will be required at twice its value (4.6 acres). Furthermore, the 2.3 acres of wetland mitigation will be clearly marked on project drawings to ensure this commitment is recognized in the future.

Revegetation Rate

Year 1	15 Percent
Year 2	30 Percent
Year 3	60 Percent
Year 4	90 Percent

7.0 ENVIRONMENTAL CONSEQUENCES

This section is organized by resources and identifies and evaluates expected impacts from the selected alternative. Impacts from the no-action alternative have been previously identified in Section 4. Environmental effects of dredging the Deepening Project were considered in the FEIS. Impacts identified here are those additional impacts that would be envisioned to occur as a result of the currently proposed alternative (Enlargement of the East River Turning Basin) when compared to approved plans.

BENTHIC COMMUNITIES

No more than minor additional impacts expected. The proposed expansion of the East River Turning Basin (including the transitions) would disturb 31.1 acres of Waters of the U.S., whereas the originally approved new turning basin would disturb 31.4 acres of Waters of the U.S. In addition, expansion of the existing turning basin would result in 15.2 newly created Waters of the U.S., whereas the originally approved plan would result in 2.2 newly created Waters. Disturbance to benthic communities through initial dredging and subsequent O&M would be essentially the same under the selected alternative, which would in also add about 13 acres of

additional bottom habitat. These additional Waters would be expected to at least in part offset the proposed impacts. Overall additional dredging impacts should be minimal and these impacts temporary in nature.

FISHERIES

No additional impacts expected.

WILDLIFE

No additional impacts expected.

THREATENED AND ENDANGERED SPECIES

Federally listed threatened and endangered sea turtles and the Florida manatee occur in the project area, especially when water temperatures are at or above 14 degrees Celsius (C). Conditions are currently in place for the Deepening Project activities to protect endangered species. These conditions are adequate to protect endangered species from the additional proposed activities. No additional effects are expected. Concurrence was received from the National Marine Fisheries Service (NMFS) by email from Eric Hawk dated October 2, 2006 and from the USFWS by letter from Sandra S. Tucker dated November 28, 2006.

ESSENTIAL FISH HABITAT

An Essential Fish Habitat (EFH) Assessment was completed in November 2001 on previously proposed modifications to the Brunswick Harbor Deepening Project, including disposal in Andrews Island of materials excavated from the mitigation site. The proposed expansion of the East River Turning Basin would disturb about the same amount of Waters of the U.S. as the originally approved alternative, but would add about 13 additional acres of Waters of the U.S. This should result in an overall increase in Essential Fish Habitat. An EFH Assessment for this proposed modification is included as an appendix to this EA. The NMFS Habitat Conservation Office approved of the turning basin expansion, with no need for further assessment of EFH by email on October 3, 2006.

MIGRATORY BIRDS

No additional impacts expected.

RECREATION

Recreational boaters would have to detour around the area during construction. This would at most be a minor inconvenience. There would be little change in impacts between the original plan and the proposed modification. Additional impacts expected to be minimal.

WETLANDS

In the 1998 Brunswick Deepening FEIS we stated we expected to impact one acre of wetlands from construction of seven new weirs and two pipe ramps and 17.1 acres of wetlands due to construction of a new turning basin in East River (total wetland impact of 18.1 acres). A wetland mitigation plan for those impact that involves restoration of 59.4 acres of previously impacted marsh on Jekyll Island has been approved. The proposed modification reduces project wetland impacts to 5.9 acres for the turning basin construction, 0.4 acres for ditches to the mitigation sites, and one acre for construction of new weirs and pipe ramps (total wetland impact of 7.3 acres), or about 40 percent of the original wetland impact proposal.

We have developed an on site wetland mitigation plan for the reduced wetland impacts. This plan involves excavation to marsh level of old dredged material mounds along the east end of Andrews Island outside the existing CDF dikes and adjacent to the dredging (impact) area. The mitigation sites contain mostly juniper, yaupon, wax myrtle, sabal palmetto, salt cedar, *Opuntia*, and *Baccharis*. The area at the southeastern tip of Andrews Island (Area J) in addition contains black cherry, chinaberry, Mulberry, hackberry, and *Iva*. Proposed mitigation consists of excavation to restore Areas 2 (0.6 acre), 4 (1.1 acres), 5 (0.3 acre), 6 (0.1), 7 (0.7 acre), 8 (1.1), 10 (1.4 acres), 11 (2.1 acres), 12 (1.1 acres), and J (5.9 acres) to an elevation suitable for natural regeneration by Spartina marsh and consistent with the elevation of adjacent existing marsh (+6 ft MLLW). A 70-foot wide shelf at marsh level would also be constructed bordering the edge of the enlarged turning basin (to produce a minimum of 2.3 acres of marsh). This results in a total of 16.7 acres. These areas are shown in the attached figures. We believe this adequately compensates for the 7.3 acres of total wetland impact for the project. Monitoring would be as originally proposed.

WATERS OF THE U.S.

We have estimated the amount of impacts to Waters of the U.S. for construction of a turning basin, under the old plan and the new one. These estimates are shown in the following table. This table shows that although the area of Waters of the U.S. that will be disturbed by dredging is about the same in both proposals, the new plan greatly increases the amount of created waters (since part of the turning basin will be constructed from high ground on Andrews Island).

	Old Plan	New Plan	New Plan with Transitions
Acres of disturbed Waters of the U.S.	31.4 acres	16.8 acres	31.1
Additional created Waters of the U.S.	2.2 acres	15.2 acres	15.2

ALTERATION OF HABITATS AT THE DISCHARGE SITE

Deposition of sediments from the proposed expansion of the existing East River Turning Basin would be in Andrews Island CDF, the same as was planned for sediments removed during construction of a new turning basin (approved plan). The purpose of the CDF is to contain dredged material so no alteration of habitats would be expected.

CULTURAL RESOURCES

A cultural resource survey of the mitigation site is planned for the near future. The results of that survey will be coordinated with the Georgia State Historic Preservation Officer and any potential impacts will be addressed.

AIR QUALITY

Some minor differences in air quality impacts may result depending on the types of equipment and mode of construction that is selected. No more than minor additional impacts expected.

NOISE

Some minor differences in noise impacts may result depending on the types of equipment and mode of construction that is selected. No more than minor additional impacts are expected.

ECONOMICS

The proposed alternative to enlarge the existing East River Turning Basin would greatly reduce wetland impacts and would result in no more than minimal additional cost.

FOOD AND FIBER PRODUCTION

No additional impacts expected.

SALINITY

No additional impacts expected.

WATER SUPPLY AND CONSERVATION, HYDROPOWER PRODUCTION, MINERAL NEEDS

No impacts expected.

FLOOD HAZARDS

No additional impacts expected.

CONSERVATION

No additional impacts expected.

LAND USE

No additional impacts expected.

SEDIMENTATION AND EROSION CONTROL (NPDES PERMIT), SHORELINE EROSION AND ACCRETION

No additional impacts from the proposed work are expected.

WATER QUALITY

The FEIS for the Deepening Project included construction of a wetland mitigation plan and approved use of mechanical dredges such as hydraulic cutterhead, bucket and clam shell dredges for the plan. Potential water quality impacts associated with dredging were addressed in the Section 404(b)(1) Evaluation included in the FEIS. That evaluation is incorporated by reference. No more than minor additional are impacts expected from the proposed modification and should be confined to the time of construction. All dredging operations produce some turbidity. Since this proposal would result in essentially the same acreage of dredging impacts to Waters of the U.S. as the originally approved project and in the same general area of East River, potential additional impacts should be minimal. Furthermore, the proposed modification would greatly reduce wetland impacts (7.3 acres vs 18.1 acres originally). Potential additional project effects would be limited to the time of construction and are expected to be minimal. The proposed minor additional dredging is not expected to have significant impacts beyond those already addressed. A Section 404(b)(1) Evaluation for this proposed work is included as an appendix to this EA. By email dated December 13, 2006, the GADNR stated "The Georgia EPD issued an initial Section 401 Water Quality Certification for deepening the Brunswick Harbor on January 30, 2002. Since that time, EPD has issued three modifications for various changes in the deepening project via Section 401 Certifications. The present request for modification for changes in the East River Turning Basin has been reviewed by this office with coordination with the DNR, Coastal Resources Division. It is the determination of this office that the proposed changes are minor in nature and result in actual reduced impacts of the overall project. Subsequently, the exisiting Water Quality Certification shall remain in effect, as will any pertinent condition of the previously issued modifications."

GROUND WATER

No additional impacts expected.

AESTHETICS

No additional impacts expected.

PROPERTY CONSIDERATIONS

No additional impacts expected.

HAZARDOUS WASTES

No additional impacts expected.

CONTAMINATED SEDIMENT

No additional impacts expected. The proposed dredging for the East River Turning Basin expansion would occur in the same general area as the originally approved new East River Turning Basin. Sediments dredged for the turning basin expansion are expected to be similar to those that would have been dredged to construct the approved new turning basin. Project sediments from the East River and near the turning basin were tested for physical and chemical parameters as part of the Deepening Project evaluation. No contaminants were identified at levels of concern.

NAVIGATION

The Brunswick Harbor Deepening Project is being constructed to improve navigation for large commercial vessels. There may be some temporary impacts to shipping during expansion of the turning basin while the dredge moves out of the way of turning ships. These impacts are expected to be minor and occur only during the actual construction of the expansion of the turning basin and approaches (transition areas).

PHYSICAL COMPATIBILITY OF DREDGED MATERIAL WITH THE DISCHARGE SITE

Sediments from construction of the turning basin expansion and the onsite wetland mitigation would be placed in the Andrews Island CDF. These sediments are expected to be similar to other Deepening sediments placed in the CDF. The Andrews Island CDF is dedicated to receiving dredged material. The proposed modification does not involve placement of sediment at any other discharge site.

CUMULATIVE IMPACTS

No additional impacts expected. This is one of three recent modifications approved or contemplated for the Brunswick Harbor Deepening Project. One approved modification was for use of a bed-leveler, but only for the current deepening of the Brunswick bar channel. Construction of the bar channel portion of the Deepening Project was nearing completion at the end of April 2004 with use of a bed-leveler and is now complete. Bed-leveler use has been approved only through the turtle window from Dec 15, 2006, through March 31, 2007. No further use of a bed-leveler during the Brunswick Harbor Deepening work is contemplated or has been approved. The other modification to include pre-treatment (punch barge and blasting) as approved construction methods for the inner harbor portion of the Deepening Project. This has not been approved and is currently not being pursued further. The cumulative detrimental

environmental impacts through approved modifications to the Brunswick Harbor Deepening Project are expected to be minimal. Construction of the East River Turning Basin expansion should markedly decrease wetland impacts (from 18.1 acres of salt marsh to 7.3 acres of salt marsh).

THE COASTAL BARRIER RESOURCES ACT

No impacts expected.

ENVIRONMENTAL JUSTICE

The proposed action complies with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", and does not represent disproportionally high and adverse human health or environmental effects on minority populations and low-income populations in the United States. The proposed sites are not used disproportionally by these populations.

SUMMARY

Environmental impacts of the No Action alternative have been considered and found to be unacceptable. These are primarily related to cost and potential environmental impacts associated with trucking mitigation site materials to an upland disposal area. The potential environmental impacts that could result from implementation of the selected alternative were identified. These effects are identified to be minor. Conditions to minimize potential impacts to Federally listed threatened and endangered species are part of the environmental constraints for the Deepening Project and would be included in any work conducted under this modification.

8.0 RELATIONSHIP OF PROJECT TO FEDERAL AND STATE AUTHORITIES

Table 3, below, summarizes the status of the compliance of the proposed action (**Alternative E**) with applicable Federal and State environmental laws.

Table 2: Relationship of Plans to Environmental Requirements

FEDERAL POLICIES	ALL ALTERNATIVES
Anadromous Fish Conservation Act, 16 U.S.C. 757, et seq.	In compliance. Draft EA was coordinated with NMFS and no adverse comments received.
Archaeological and Historic Preservation Act, as amended, 16 U.S.C. 469, et seq.	Partial compliance. A cultural resource survey of the mitigation sites on Andrews Island will be conducted and the results coordinated with GASHPO.
Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.	In compliance. Draft EA was coordinated with EPA. No objection provided by telcon dated 6 October 2006.
Clean Water Act, as amended (Federal Water Pollution Control Act) 33 U.S.C. 1251, et seq.	In compliance. Draft EA was coordinated with GA DNR and WQ Certification for original proposed Jekyll Creek mitigation site modifications received 24 May 2004. By email dated 12 Dec 2006, GADNR stated the East River Turning Basin modification is covered by the original project WQ certification.
Coastal Barrier Resources Act, as amended,	In Compliance.
16 U.S.C. 3501, et seq. Coastal Zone Management Act, as amended, 16 U.S.C. 1451 et seq.	Work would not be within a CBRA unit. In compliance. A Consistency Determination was coordinated with GA CZM office. By email dated 12 Dec 2006, GADNR stated the East River Turning Basin modification is covered by the original project Consistency Determination.
Endangered Species Act, as amended, 16 U.S.C. 1531, et seq.	In compliance. The District's no additional affect determination is documented in this EA. The EA was coordinated with the USFWS and NMFS. No objections were received. NMFS provided concurrence by email dated October 2, 2006. USFWS provided concurrence by letter dated November 28, 2006.
Environmental Justice E.O. 12898	In compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq	Estuaries and their resources have been considered in this evaluation.
Federal Water Project Recreation Act, as amended, 16 U.S.C. 4601-12, et seq.	In compliance.
Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, et seq.	In compliance. No separate report deemed necessary. Draft EA was coordinated with the GA Dept. of Natural Resources, as well as the USFWS and NMFS. No objections received.

FEDERAL POLICIES	ALL ALTERNATIVES
Fishery Conservation and Management Act of 1976, Public Law 99-659.	In compliance.
Floodplain Management E.O. 11988	Construction would be in the lower estuary such that it would have no impact on the floodplain.
Marine Mammal Protection Act, 15 U.S.C. 1361 et seq.	No impacts expected. Conditions to minimize potential impacts to manatees would be included in the contract specifications.
Magnuson-Stevens Act, as amended, Public Law 104-297.	In compliance. District's EFH Assessment of minimal impact was coordinated with NMFS. Concurrence on modifications to the Jekyll Creek mitigation plan were received by letter dated 25 May 2004. Concurrence on the East River Turning Basin Expansion Modification was received by email from Kay Davy on October 3, 2006.
Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. 1401, et seq.	In Compliance. No Ocean Disposal is proposed for the East River Turning Basin Expansion Modification. Section 103 Evaluation for potential placement of Jekyll Creek Mitigation site sediments was coordinated with EPA. No concurrence has been received. However, since the Jekyll Creek Mitigation site alternative has not been selected, Section 103 concurrence is not applicable.
Migratory Bird Conservation Act of 1929, 16 U.S.C. 715	No unacceptable impacts. EA was coordinated with USFWS and GADNR. No adverse comments were received.
Migratory Bird Treaty Act of July 3, 1918 as amended.	No negative effects. In compliance.
National Environmental Policy Act of 1969 (NEPA), as amended, 42 U.S.C. 4321, et seq. National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470f, et seq.	This evaluation is being performed in compliance with NEPA. Partial compliance. Cultural Resource survey of the Andrews Island mitigation sites will be conducted and the results coordinated with GASHPO.
Principles and Guidelines, ER 1105-3-30	In compliance.
Protection of Wetlands E.O. 11990 Rivers and Harbors Act, 33 U.S.C. 401 et seq.	In compliance. This evaluation was conducted in compliance with Section 10 of the Act.
Water Resources Council	In compliance. Draft EA was coordinated with GADNR. No adverse comments were received.

9.0 COORDINATION

On April 30, 2004, Savannah District issued a Joint Public Notice for this proposed work, notifying the public of the availability of this draft EA. The Public Notice serves as the formal advertisement of the project in accordance with Sections 401 and 404 of the Clean Water Act and the Magnuson-Stevens Fishery Conservation and Management Act to agencies, organizations, and individuals which have expressed an interest to Savannah District on actions which could impact the environment in Glynn County and the State of Georgia. The notice was sent to individuals, businesses, groups, and agencies that are on the Georgia, Glynn County, and Mariners mailing lists. In addition, separate letters were mailed to resource agencies, local groups and libraries.

Subsequent Resource Agency Coordination of a Minor Modification (Proposed Expansion of the East River Turning Basin). The proposal to reduce overall project wetland impacts and required wetland mitigation by expanding the existing East River Turning Basin rather than build a new turning basin was coordinated with the resource agencies by emails on April 27, 2006, and September 20, 2006. Those emails contained the additional request for concurrence that the proposed modifications were minor in nature when compared to the Jekyll Island Mitigation Plan and should not require a separate EA. The precise requests to the resource agencies are listed below.

NOAA Fisheries. We received approval of the EFH assessment for modifications to the original mitigation plan from the Habitat Conservation Division by letter dated May 25, 2004. This letter included several concerns including temporary impacts to adjacent marsh. We believe our revised proposal should reduce temporary and overall wetland impacts. We ask that this agency concur that the proposed revisions do not alter their concurrence.

NMFS Protected Resources. We believe that since the proposed work involves essentially the same amount of dredging of Waters of the U.S. as originally proposed, this modification would have no additional effect on Federally listed threatened and endangered Species or marine mammals under the purview of NMFS. We request concurrence in this determination.

GADNR Water Quality Certification. We received water quality certification for the proposed modifications from the Georgia Department of Natural Resources by letter dated May 24, 2004. We believe the currently proposed modification greatly reduces proposed wetland impacts. We ask that this agency concur that the currently proposed modifications do not alter their decision to issue water quality certification for this project modification.

GADNR Coastal Zone Consistency. We received a number of technical comments and questions by letter dated May 28, 2004, from the Director, Coastal Resources Division, concerning our Federal Consistency Determination. These questions involved primarily potential trucking impacts to Jekyll Island, potential marsh impacts, and the proposals to construct temporary dock facilities at the Jekyll Island site. We believe our proposal to enlarge the existing turning basin in East River greatly reduces potential marsh impacts by the project. In addition, we are eliminating any proposed work at Jekyll Island. We intend to finalize the

Federal Consistency Determination to reflect our revised proposal. We ask that this agency now find our proposal consistent with their program to the maximum extent practicable.

EPA Section 103 Concurrence. We intend to eliminate from the Final EA the Section 103 Evaluation concerning potential transport and disposal of mitigation site sediments to the Brunswick ODMDS. No Section 103 concurrence is now required.

EPA Clean Air Act. We received comments from the wetlands section regarding aspects of the mitigation plan, including acreage calculations, baseline data, and potential total maximum daily load (TMDL) modeling. We have data documented the upland condition of the proposed mitigation areas. We also revised the wetland mitigation requirements and added additional acreage to the plan. We believe our proposed large reduction in wetland impacts and required mitigation construction greatly reduces potential overall project environmental impacts which should not require any TMDL study. We ask for concurrence that the proposed revisions are minor in scope and can be included in the final EA without further NEPA consideration.

USFWS, NMFS, GADNR Fish and Wildlife Coordination Act. The draft EA stated that no separate report was deemed necessary. We believe our proposed large reduction in wetland impacts and required mitigation construction greatly reduces overall project environmental impacts. We ask the USFWS, NMFS, and GADNR for concurrence that no separate report is necessary and finalizing the EA as proposed is appropriate.

USFWS Endangered Species Act. We believe that since the proposed work involves essentially the same amount of dredging of Waters of the U.S. as originally proposed, this modification would have no additional effect on Federally listed threatened and endangered Species or marine mammals under the purview of the USFWS. We request concurrence in this determination.

10.0 PREPARERS

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1987-present: US Army Corps of
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11.0 REFERENCES

CESAS, 1998. Final Environmental Impact Statement, Brunswick Harbor Deepening Project, Brunswick, Georgia. Planning Division, Environmental Resources Branch, Savannah District Corps of Engineers. March 1998.